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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/080,994

02/20/2002

Akira Tsukihashi

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26021

7590

08/02/2004

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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 08/02/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/080,994

Applicant(s)

TSUKIHASHI ET AL.

Examiner

Michael V Battaglia

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB08)
Paper No(s)/Mail Date 3.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claims 4, 10 and 13 are objected to because of the following informalities.
 - a. On line 3 of claim 4, removing "[said]" is suggested.
 - b. On line 3 of claim 10, removing "the" from "the current recording property data" is suggested to avoid antecedent basis issues.
 - c. On line 2 of claim 13, replacing "circuit" with -means- is suggested to avoid improper antecedent basis issues.Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 2652

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 14 and therefor 15-22 are rejected under 35 U.S.C. 112, first paragraph. Claim 14 is a single means claim because the recording/reproducing apparatus comprises a controller means that does not appear in combination with another recited element of means. Claim 1 is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph (see *In re Hyatt*).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Salmonsens et al (hereafter Salmonsens) (US 6,636,468).

In regard to claim 1, Salmonsens discloses a recording/reproducing apparatus (Fig. 2) in which a recording signal is written onto a disk, comprising: a buffer (Fig. 2, element 275) which temporarily stores the recording signal; and a control circuit (Fig. 2) which controls the recording of the recording signal onto the disk during the recording of the recording signal onto the disk so as to interrupt the recording of the recording signal onto the disk when an amount of the recording signal data in the buffer is not greater than an interruption setting value (Col. 4, lines 1-17), and to resume the recording of the recording signal onto the disk when the amount of the recording signal

data in the buffer is not less than a resumption setting value during the recording of the recording signal onto the disk (Col. 4, lines 18-26), wherein the control circuit reproduces the signal written on the disk before the recording is resumed (Col. 5, lines 5-7); records, based on this reproduced signal, the recording signal after resuming the recording onto the disk in continuation with the recording signal before the interruption (Col. 4, lines 27-44); and detects the recording properties of the disk based on the signal reproduced before the recording is resumed (Col. 5, lines 10-11).

In regard to claim 2, Salmonsén discloses that when recording is resumed, the control circuit sets recording conditions based on the detected recording properties (Col. 5, lines 20-26).

In regard to claim 12, Salmonsén discloses a recording/reproducing apparatus (Fig. 2) in which a recording signal is written onto a disk, comprising: a buffer (Fig. 2, element 275) which temporarily stores said recording signal; and a control means (Fig. 2) which controls the recording of the recording signal onto the disk during the recording of the recording signal onto the disk so as to interrupt the recording of the recording signal onto the disk when an amount of said recording signal data in said buffer is not greater than an interruption setting value (Col. 4, lines 1-17), and to resume the recording of the recording signal onto the disk when the amount of said recording signal data in said buffer is not less than a resumption setting value during the recording of the recording signal onto said disk (Col. 4, lines 18-26), wherein said control means reproduces the signal written on said disk before the recording is resumed (Col. 5, lines 5-7); records, based on this reproduced signal, the recording signal after resuming the recording onto the disk in continuation with the recording signal before the interruption (Col. 4, lines 27-44); and detects the recording properties of said disk based on the signal reproduced before said recording is resumed (Col. 5, lines 10-11).

In regard to claim 13, Salmonsens discloses that when recording is resumed, said control means sets recording conditions based on said detected recording properties (Col. 5, lines 20-26).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-8 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salmonsens in view of Yen et al (hereafter Yen) (US 6,643,233).

In regard to claims 3 and 14, Salmonsens discloses a method for recording/reproducing comprising: and a recording/reproducing apparatus comprising a controller (Figs. 2 and 3) for: controlling the recording of a recording signal onto a disk so that the recording signal is recorded onto the disk at a constant linear speed (Col. 5, lines 39-44); and interrupting the recording of the recording signal onto the disk (Fig. 4, element 440 and Col. 6, lines 66-67), reproducing the signal writing on the disk before resuming a reproducing/recording operation (Col. 6, line 67-Col. 7, line 1) and detecting the recording properties of the disk based on the reproduced signal (Col. 7, lines 5-12) in order to set the writing laser power (Col. 5, lines 21-22). Salmonsens further discloses that by reevaluating the quality of a reproduced signal at arbitrary times and places, the laser power is appropriately adjusted to produce a better quality read-back signal (Col. 2, lines 58-62).

Salmonsens does not disclose that the recording properties of the disk are detected in order to set the linear speed.

Yen discloses detecting the recording properties of the disk based on the reproduced signal in order to set the linear speed (Col. 2, lines 2-16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect the recording properties of the disk based on a reproduced signal in the method and apparatus of Salmonsens in order to set the linear speed as suggested by Yen and in order to set the writing laser power as suggested by Salmonsens, the motivation being to set the linear speed, in addition to the writing laser power, to levels better suited to the recording conditions at arbitrary times and places.

In regard to claim 4 and 15, Salmonsens discloses setting the laser power when recording is resumed in accordance with the detected recording properties (Fig. 4, element 455). Therefore, the linear recording speed will also be set when recording is resumed in accordance with the detected recording properties in the method and apparatus of Salmonsens in view of Yen.

In regard to claims 5 and 16, Salmonsens discloses setting laser power when recording is resumed in accordance with the recording properties detected based on the reproduced signal. Therefore, the linear recording speed will also be set when recording is resumed in accordance with the recording properties detected based on the reproduced signal in the method and apparatus and apparatus of Salmonsens in view of Yen. Salmonsens further discloses that no adjustments are made until it is determined that adjustments should be made. Therefore, the reproduction will occur at linear speed at the time of interruption of recording.

In regard to claims 6-8 and 17-19, Yen discloses setting the linear speed based upon the predetermined criteria that the detected recording properties fulfill/do not meet (Col. 2, lines 2-16). It is noted that detected recording properties are the number of errors detected in the reproduced signal and the predetermined criteria that are fulfilled or not met are the sets of

number ranges corresponding to the number of errors. Therefore, in the method and apparatus of Salmonsens in view of Yen, recording is resumed with a linear recording speed higher than the linear speed at the time of interruption of recording, an unchanged linear recording speed, or a reduced linear recording speed depending on which of the predetermined criteria are fulfilled or not met.

8. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salmonsens in view of Yen as applied to claims 5 and 16 above, and further in view of Takeshita (US 6,556,524).

Salmonsens in view of Yen discloses adjusting the linear recording speed and resuming a recording operation, when the detected recording properties indicate that adjustment is needed. Salmonsens in view of Yen does not specifically disclose lowering the linear recording speed and resuming a recording operation, when the detected recording properties indicate that reproduction is not possible.

Takeshita discloses lowering a recording speed when the detected recording properties indicate that reproduction is not possible (Fig. 3, elements S24-S26). The recording speed is lowered to a speed that may produce recordings having detected recording properties of acceptable quality for reproduction (Fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to lower the linear recording speed and resume a recording operation in the method and apparatus of Salmonsens in view of Yen when the detected recording properties indicate that reproduction is not possible as suggested by Takeshita, the motivation being to adjust the linear recording speed to a speed at which the recorded signal may be able to be reproduced

when it has been determined that the quality of the reproduced signal is unacceptable for reproduction.

9. Claims 10, 11, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salmonsens in view of Yen as applied to claims 3 and 14 above, and further in view of Takeshita.

In regard to claims 10 and 21, Salmonsens discloses comparing recording property data detected at a previous point with current recording property data to detect the recording properties (Col. 6, lines 12-18). Salmonsens does not disclose that the previous point at which recording property data is detected is a point of change of linear recording speed. The previous point at which recording property data is detected is instead during an optimum power control (OPC) process (Col. 6, lines 16-18).

Takeshita discloses performing an OPC while also changing the recording speed (Abstract) to determine an optimum recording speed in which read errors during reproduction are minimized (Col. 6, lines 21-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform an OPC in the method and apparatus of Salmonsens in view of Yen while changing the recording speed as suggested by Takeshita, the motivation being to additionally determine an optimum recording speed during the OPC process of Salmonsens. It is noted that when changing the recording speed is added to the method and apparatus of Salmonsens in view of Yen, previous point at which recording property data is detected becomes a point of change of linear recording speed.

In regard to claims 11 and 22, Salmonsens discloses that writing laser power for resumption of recording is set based on a difference between the recording property data previously detected and the current recording property data (Col. 6, lines 16-20). Therefore, in the method and

apparatus of Salmonsens in view of Yen and further in view of Takeshita, the writing laser power and the linear recording speed for resumption are set based on a difference between the recording property data detected at the previous change time of the linear recording speed and the current recording property data.

Citation of Relevant Prior Art

10. Tsukihashi (US 6,496,458) discloses reducing a recording speed when a recording condition judgment section determines that errors in a reproduced signal may lead to recording failure (Col. 5). Hayashi (US 6,487,616) discloses interrupting and restarting writing from a buffer to prevent buffer underrun errors and reproduces recorded data to synchronize the write restart (Abstract). Choi et al (US 6,570,831) discloses varying a recording speed according to the amount of information in a buffer (Fig. 5). Yamamoto (US 6,418,099) discloses pausing recording due to a buffer underrun condition and restarting writing at a lower recording speed when the buffer is full (Fig. 11). Youn (US 6,493,298) discloses varying a reproduction speed according the speed of data transmission (Fig. 4).

Conclusion

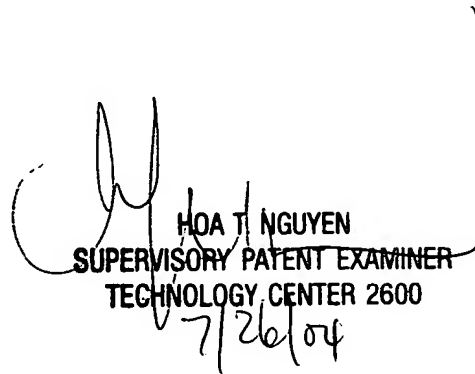
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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